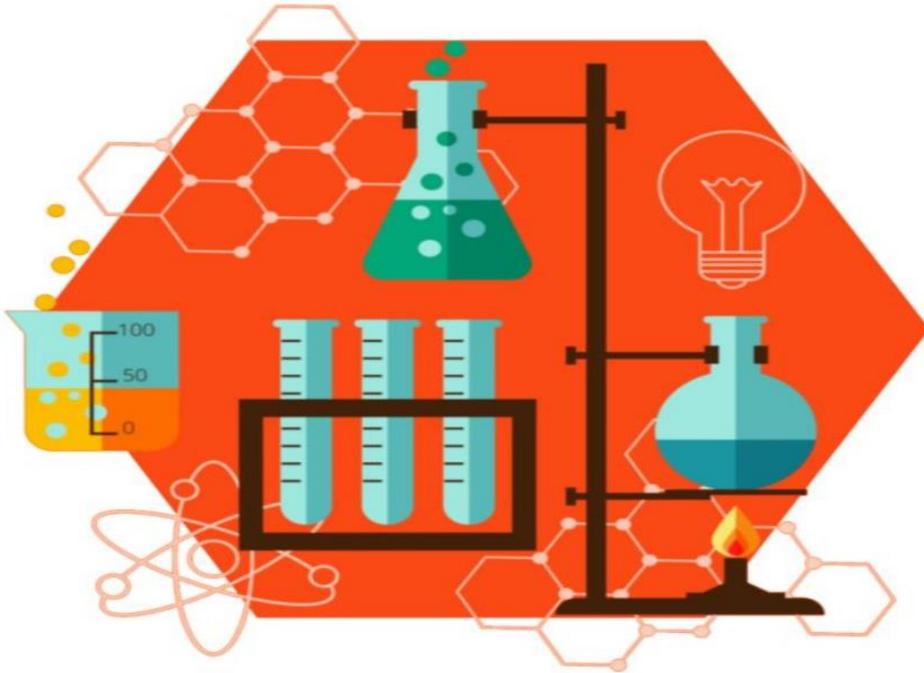




PAST PAPERS

بجانب



CHEMISTRY

DONE BY: Areej AL-Manaseer

1) which atom has the largest first ionization energy?

A) Sr B) AL C) Ga D)Cs e) Fr

2) how many orbitals are in the $n=3$ shell?

A) 1 B) 2 C) 4 D) 9 e) 8

3) Which of the following element is paramagnetic in its ground state?

A) zn ($z=30$) B) Hg($z=80$) C) Ba ($z=56$) D) Kr($z=36$) e) K ($z=19$)

4) which one of the following orders of increasing electronegativities its correct?

A) $Mg < P < N < F$

B) $N < Mg < P < F$

C) $F < p < Mg < N$

D) $F < Mg < N < P$

E) $F < Mg < N < P$

#5) Which of the element is diamagnetic in its ground state ?

A) Si($z=14$) b) H ($z=1$) c) p ($z=15$) d) Kr ($z=36$) e) K ($z=19$)

6) Which one of the following sets of quantum number correctly represents a 3s orbital?

	n	L	m_L
a	3	1	1
b	4	3	3
C	3	1	-1
d	3	0	0
e	3	2	0

7) Which of the following molecules has no net dipole moment (nonpolar)?

- A) H_2O
- B) PH_3
- C) SH
- D) SiH_4
- E) CH_3Cl

8) Which one of the following molecules is nonpolar?

- A) XeF_2
- B) SOCl_2
- C) CHCl_3
- D) CH_2Cl_2
- E) SF_4

9) The electron configuration of a ground state vanadium (zn)

- A) $[\text{Ar}] 4s^1 4p^4$
- B) $[\text{Ar}] 4s^2 3d^3$
- C) $[\text{Ar}] 4s^2 4d^3$
- D) $[\text{Ar}] 4s^2 4p^3$
- E) $[\text{Ar}] 3d^5$

10) The element whose $2+$ ion has a configuration of $[\text{Ar}]$ is :

- A) Sr
- B) S
- C) Ba
- D) Te
- E) Ca

11) which one the following sets of quantum numbers is not possible?

- A) $n=2$ $L=1$ $M_L=1$
B) $N=3$ $L=2$ $M_L=-2$
C) $N=1$ $L=1$ $M_L=-1$
D) $N=1$ $L=0$ $M_L=0$
E) $n=2$ $L=1$ $M_L=-1$

12) in which of the following bonds would p have a partial negative charge?

- A) P-N B) P-Cl C) P-Si D) P-O E) P-S

13) What is the maximum number of electrons that can be placed in a subshell with $n=4$ and $L=3$?

- A) 8 b) 6 c) 14 d) 2 e) 10

14) The bond angles in SiI_4 are expected to be:

- A) 180 b) 90, 120 and 180 c) 109.5 d) 90 and 180 e) 120

15) which of the following ionic compounds does not exist?

- A) BaI_2 b) SrO C) RbBr d) CsO e) CsI

16) how can Br acquire a noble gas electron configuration?

A) by losing two electrons

B) by losing one electron

C) by gaining two electrons

D) by losing three electrons

E) by gaining one electron

17) which of the following N-bonds is most polar?

A) N-B B) N-N C) N-O D) N-C E) N-Be

18) which of the following atoms is smallest in size?

A) Mg B) Si C) Al D) Na E) Cl

19) how many electrons are there in the valence shell of Br in BrO_4^- ?

A) 12 B) 14 C) 4 D) 10 E) 6

20) Which one of the following electron configurations is considered a pseudo-noble gas configuration?

A) $\{\text{Rn}\}7s^1$

B) $\{\text{Ar}\} 3d^{10} 4s^2 4p^3$

C) $\{\text{Ne}\} 3s^2 3p^2$

D) $\{\text{Xe}\} 4f^{14} 6s^2 5d^5$

E) $\{\text{Rn}\}5f^{14}$

21) The average speed of nitrogen gas (N_2) 28g/mol) that effuses at 30.0 C is 500m/s the average speed at which butene gas (C_4H_8 56g/mol) effuses at the same temperature is :

A) 396m/s B) 339 m/s C) 481 m/s D)354m/s E)495m/s

22) which one of the following elements is expected to have the highest electronegativity?

A) element (X): L.E= 2.5×10^3 KJ/mol and E,A= 2.5×10^3 KJ/mol

B) element (q) : L.E= 5.0×10^3 KJ/mol and E,A= 2.0×10^3 KJ/mol

C) element (t) : L.E= 5.5×10^3 KJ/mol and E,A= 1.0×10^3 KJ/mol

D)element (z): L.E= 1.0×10^3 K/J mol and E,A= 3.0×10^3 KJ/mol

E) element (y): L. E= 3.0×10^3 KJ/mol and E, A= 1.0×10^3 KJ/mol

23) which of the following atoms or ions are isoelectronic?

A) K^+ and Cl

B) Be^{+2} and B

C) N^{-3} and f

D) Li^+ and Be^{+2}

E) Ca^{+2} and Mg^{+2}

24) how many electrons in an atom can have the following quantum numbers?

$$n=4 \quad L=3 \quad m_L=3$$

- A) 2 b) 4 c) zero d) 1 e) 6

The correct answer is (a)

25) What is maximum number of electrons in an atom that can have the following set of quantum number? $n=4$ $L=2$

- A) 0 b) 1 c) 2 d) 6 e) 10

The correct answer is (e)

26) the maximum number of electrons 4f orbitals can accommodate is:

- A) 2 b) 6 c) 10 d) 14 e) 18

The correct answer is (d)

27) an electron in the 3p subshell of an atom would?

- A) require less energy to ionize than a 2p electron
B) be less attracted to the nucleus than a 4d electron
C) have higher energy than a 4s electron
D) have the same energy as a 3d electron
E) be farther away from the nucleus than a 4s electron

The correct answer is (a)

28) which of the following electronic configurations is not correct :

a) ${}_{24}\text{Cr}: 1s^2 2s^2 2p^6 3s^2 3p^6 3d^4 4s^2$
 b) ${}_{29}\text{Cu}: 1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1$
 c) ${}_{21}\text{Sc}: 1s^2 2s^2 2p^6 3s^2 3p^6 3d^1 4s^2$
 d) ${}_{30}\text{Zn}: 1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2$
 e) ${}_{25}\text{Mn}: 1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$

The correct answer is (a)

29) what is the correct ground state electron configuration for Si?

a) $1s^2 2s^2 2p^6 3s^2 3p^6$
 b) $1s^2 2s^2 2p^6 3s^2 3p^4$
 c) $1s^2 2s^2 2p^6 2d^4$
 d) $1s^2 2s^2 2p^6 3s^2 3p^2$
 e) $1s^2 2s^2 2p^6 3s^1 3p^3$

The correct answer is (d)

30) which of the following choices the correct orbital diagram for a cobalt atom?

	$4s$	$3d$
A. [Ar]	$\uparrow\downarrow$	$\uparrow\downarrow \uparrow\downarrow \uparrow\downarrow \uparrow$
B. [Ar]	\uparrow	$\uparrow\downarrow \uparrow\downarrow \uparrow\downarrow \uparrow\downarrow$
C. [Ar]	\uparrow	$\uparrow\downarrow \uparrow\downarrow \uparrow\downarrow \uparrow\uparrow$
D. [Ar]	\uparrow	$\uparrow\downarrow \uparrow\downarrow \uparrow\downarrow \uparrow\downarrow$
E. [Ar]	$\uparrow\downarrow$	$\uparrow\downarrow \uparrow\downarrow \uparrow\downarrow \uparrow$

The correct answer is (e)

31) which of the following has the largest radius?

- A) C b) B c) N d) O E) F

The correct answer is(b)

32) which of the following arrangements of the first ionization energy is correct?

- A) $\text{Li} < \text{Be} < \text{B} < \text{C}$
B) $\text{Na} < \text{Mg} < \text{Al} < \text{Si}$
C) $\text{C} < \text{N} < \text{O} < \text{F}$
D) $\text{Li} < \text{B} < \text{Be} < \text{C}$
E) $\text{Si} < \text{P} < \text{S} < \text{Cl}$

The correct answer is(d)

33) which of the following the atoms would have the largest second ionization energy?

- A) Na b) Mg c) Cl d) S E) Cs

The correct answer is(a)

34) among the following the element with highest first ionization energy?

- A) Ga b) As c) Se d) Ge e) Ca

The correct answer is(b)

35) the species which one electron could most easily be removed is :

- A) Na^+ B) Ne c) Mg^+ d) F E) Na

The correct answer is(e)

36) Given the following ionization energies (in KJ/mol) for an element:

first ionization energy = 419

Second ionization energy = 3015

Third ionization energy = 4411

Fourth ionization energy = 5877

The element is in group:

A) IA B) IIA C) IIIA D) IVA E) VA

The correct answer is (A)

37) Given the following set of data

Sublimation energy of Li = 155 KJ/mol

first ionization energy of Li = 521 KJ/mol

F-F bond dissociation energy = 158 KJ/mol

Electron affinity for F = 328 KJ/mol ($F_{(g)} + e \rightarrow F^{-}_{(g)}$)

For the change: $Li^{+}_{(g)} + F^{-}_{(g)} \rightarrow LiF_{(l)}$ $\Delta H = 1034 \text{ KJ}$

Calculate ΔH_f for $LiF_{(l)}$ (in KJ/mol)

A) 1242 b) -607 c) -599 d) -599 e) -914

The correct answer is (b)

38) Which combination below will have the most negative lattice energy?

- A) low charge ions separated by large distances
- B) low charge ions separated by small distances
- C) High charge ions separated by large distance
- D) high charge ions separated by small distances

The correct answer is(d)

39) assuming that the separation between cation and anions the lattice in nearly identical , which species would have the greatest lattice energy ?

- A) sodium chloride
- B) calcium chloride
- C) sodium oxide
- E) calcium oxide

The correct answer is(e)

40) Which one of the following electron configurations of Mn^{+2} ion?

- A) $\{\text{Ar}\} 3d^4$
- B) $\{\text{Ar}\} 3d^2 4s^2$
- C) $\{\text{Ar}\} 3d^3 4s^1$
- D) $\{\text{Ar}\} 3d^3 4s^2$
- E) $\{\text{Ar}\} 3d^5$

The correct answer is(a)

41) which species is more likely covalently bonded ?

A)CaCl

B) NaF

C) CaF₂

D)MgBr₂

the correct answer is(d)

42) Which of the following atoms or ions has the smallest radius ?

A) Na⁺ b)F⁻ C) Mg⁺² d) O⁻² e) Ne

43) which of the following arrangement is in order of increasing size?

A)S⁻² <Cl⁻ <K⁺<Ca⁺²<Ga⁺³

B) Ga⁺³ <Ca⁺²<K⁺<Cl⁻<S⁻²

C)Ga⁺³<S⁻²<Ca⁺²<Cl⁻<K⁺

D) Ga⁺³<Ca⁺²<S⁻²<Cl⁻ <k⁺

E)Ga⁺³<Ca⁺²<S⁻²<K⁺<Cl⁻

the correct answer is(b)

44)how many electrons are required to complete the octet around nitrogen ?

A)2 b)3 c)1 d) 4 e)6

the correct answer is(b)

45) among the following atoms : N,Na,P,O,S in order of increasing electronegativity

A) Na<S<N<P<O

B)Na<P<N<O<S

C) Na<P<S<N<O

D)Na<S<P<N<O

the correct answer is(C)

46) Which of the following species has the least polar bond ?

A) HCl

b) HF

C) HI

D) HBr

the correct answer is(c)

47) Which one of the following bonds is most polar ?

A) B-C

B) B-N

C) B-O

D) B-F

E) F-F

48)The number of bonding pairs (shared pairs) of electrons in the lewis structure of O₂ is

A)5

b) 2

c)1

d) 5

e)3

the correct answer is(b)

49+50)

Which one of the following is the most stable structure for N_3 ?

a) $\ddot{N}-N \equiv N:$ b) $\ddot{N}-N-\ddot{N}:$ c) $\ddot{N}=\ddot{N}=\ddot{N}:$

d) $\begin{array}{c} \ddot{N} \\ \diagup \quad \diagdown \\ \ddot{N} \quad \ddot{N} \end{array}$ e) $\ddot{N}=\ddot{N}-\ddot{N}:$

The correct answer is (c)

Question: ()

Which of the following is the correct Lewis structure of HCN?

a. $H-C \equiv N$ b. $H=C \equiv N:$

c. $H-C=N:$ d. $H=C-N:$

The correct answer is (c)

51) which species is most likely to have multiple bond ?

- A) Co B) H_2O C) PH_3 D) BF_3 E) CH_4

the correct answer is (a)

52) how many electrons does NO_2 have and how many are in the structure below?

- A) 16,18 B) 17,18 C) 18,18 D) 16,16 E) 15,16

the correct answer is (B)

53) Choose the correct statement about SeO_2

- A) the Se–O bond are ionic in character
- B) the molecule has a linear structure
- C) the two Se–O bond have different length since one is single and the other is double
- D) the Se atom has an unshared electron pair
- E) none of the above

the correct answer is(d)

54) according to VSEPR theory the shape of the ion BH_4^- is :

- A) tetrahedral
- b) trigonal bipyramidal
- c) octahedral
- D) square planar
- e) distorted tetrahedral

the correct answer is(a)

55) in the Lewis structure for ICl_2^- , the number of lone pairs of electrons around the central atom is :

- A) 0
- b) 1
- c) 2
- d) 3

the correct answer is(d)

56) in which of the compounds is the octet rule violated by the central atom ?

- A) PF_3
- b) SO_4^{2-}
- C) NH_3
- D) ClF_3

the correct answer is(d)

57) draw Lewis structure that obeys the octet rule for the ion: ClO_3^- and calculate the formal charge on the central atom, Cl

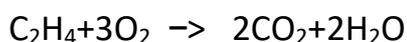
- A) 3+ b) 2+ c) +1 d) 0 e) -2

the correct answer is(b)

58) Given the following bond energies :

Bond	bond energy (KJ/mol)
C=C	614
O=O	745
C=O	789
O=H	467
C=H	413

Calculate ΔH for the reaction



- A) -547 KJ B) -531 KJ C) -463 KJ D) -523 KJ E) -486 KJ

the correct answer is(d)

59) using the VSEPR model, the arrangement of electron pairs around the central atom (s) in SO_2 is :

- A) linear b) trigonal planar c) tetrahedral d) trigonal bipyramidal
E) octahedral

the correct answer is(b)

60) the shape of XeOF₂ molecule (Xe is the central atom)is

- A) pyramidal b) tetrahedral c) T-shaped d) trigonal planar
E) octahedral

61) all of the following molecules are polar molecules except

- A) SF₄ b) ICl₃ c) HCl d) XeF₂

the correct answer is(d)

62) What is the bond angle in NH₃ molecule ?

- A) 180 ° b) 109.5 ° c) 120 ° d) slightly less than 109.5 °

the correct answer is(d)

63) All of the following species are linear except :

- A) NO₂⁺ B) CS₂ C) BeH₂ D)NO₂⁻¹

the correct answer is(d)

64) which on of the following has the same shape as SeO₃⁻² ?

- A) NH₃ b)SeO₃⁴ C) SO₃ D)NO₃

the correct answer is(a)

65) which o the following molecules has a T-shape?

- A) So₃ b) ClF₃ c) NCl₃ d) PH₃

the correct answer is(b)

66) the shape of NH₃ is described as :

- A) trigonal pyramidal b) tetrahedral c) square planar d) planar
triangular

the correct answer is(a)

67) The shape of molecule SeCl_4 is :

- A) distorted tetrahedral B) tetrahedral
C) trigonal bipyramidal d) square planar

the correct answer is(a)

68) when the SeCl_2 changes into SeCl_4 through the reaction

$\text{SeCl}_2 + \text{Cl}_2 \rightarrow \text{SeCl}_4$, the shape changes respectively :

- A) form tetrahedral to square pyramidal
B) from linear to tetrahedral
C) from bent to square planar
D) from bent (V - shape) to distorted tetrahedral

the correct answer is(d)

69) which of the following molecules has a T- shape?

- A) SO_3 b) ClF_3 c) NCl_3 d) PH_3

the correct answer is(b)

70) which of the following molecules has no dipole moment (non polar)

- A) SO_2 b) XeF_2 c) CH_2Cl_2 D) NH_3 E) SF_4

the correct answer is(B)

71) the polar molecule among the following is:

- A) SF_6 B) BeCl_2 C) BF_3 D) OF_2 C) CCL_4

the correct answer is(d)

72) which of the following is polar

- A) N_2O B) BeCl_2 C) CS_2 D) SiO_2 E) none

the correct answer is(e)

73) which one of the molecules does not have a net dipole moment?

- A) PCl_3 b) XeF_2 C) ClF_3 d) AsCl_3

the correct answer is(b)

74) the bond angle in H_2O molecule is:

- A) 109.5° b) 90° c) 104.5° d) 120°

the correct answer is(c)

75) the shape of the molecule SeCl_4 is

- A) distorted tetrahedral
B) tetrahedral
C) trigonal bipyramidal
D) square planar

the correct answer is(a)

76) All of the following molecules have polar bonds and are polar molecules **except**

- A) BCL_2 B) ICL_2 C) PCL D) ICL

the correct answer is(a)

77) the lone pair of electronics on nitrogen in NO_2 – IS present is an orbital of the type

- A) sp hybrid b) $\text{sp}^3 \text{d}$ hybrid c) sp^3 hybrid d) sp^2 hybrid

the correct answer is(d)

78) the hybridization of I in IBr_3 (I is the central atom) is

- A) sp^3 b) sp^2 c) d^2sp^3 d) dsp^3 e) sp

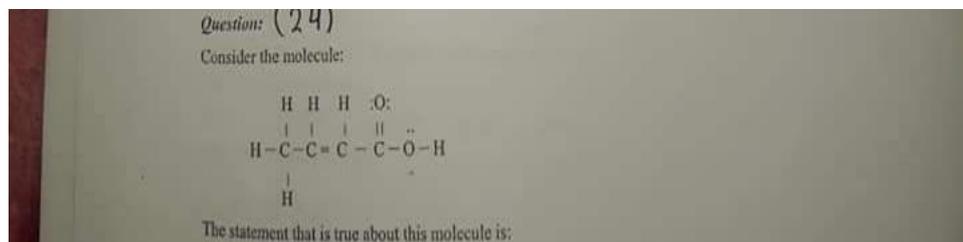
the correct answer is(d)

79) a triple bond contains sigma bond (s) and..... Pi bonds (s)

- A) 2,1 b) 1,2 c) 3,0 d) 0,3

the correct answer is(b)

80) consider the molecule

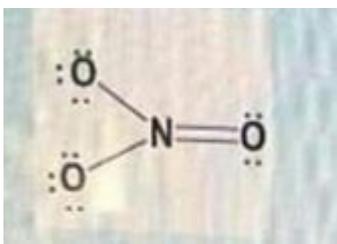


The statement that is true about this molecule is:

- A) there is a total of 10 bond
B) there is a total of 4 π bonds
C) there are 4 atom having sp^2 hybridization
D) the bonds in this molecule are formed by head to head overlap of hybrid orbitals

the correct answer is(c)

81) what formal charges are there in the following Lewis structure of NO_3^- ?



- A) N has -1 , each O atom has 0
- B) N has 0, one O atom has -1
- C) N has $+1$, each O atom has -1
- D) N has 0, two O atom has -1 and one O atom has 0
- E) N has $+1$, two O atom has -1 and one O atom has 0

82) when carbon atom has sp^2 hybridization it has

- A) 4 π bonds
- B) 4 sigma bonds
- C) two π bonds and two sigma bonds
- D) one π bond and 3 sigma bonds

the correct answer is(b)

83) what type of bond exists between the C and O atoms in CH_2O (I.e, single, double,etc.) ?

- A) single bond
- B) double bond
- C) triple bond
- D) there is no bond between the C and the O because the oxygen is bonded to a H: C-H-H-O

the correct answer is(B)

84) According to the molecular orbital model, the paramagnetic species among the following is :

- A) Li_2 b) C_2 c) N_2 D) O_2^{-2} E) F_2

the correct answer is(B)

85) Using the molecular orbital model, the diatomic species that has a bond order of 2 is:

- A) CO B) CO^+ C) CO_2^+ D) NO^+ E) NO

the correct answer is(C)

86) which of the following diatomic molecules has the greatest bond order?

- A) Cl_2 B) HCL C) CO D) HF

the correct answer is(C)

87) which of the following is not determined by the principal quantum number n,

Of the electron in hydrogen atom :

- A) the size of the corresponding atomic orbital(s)
B) the shape of the corresponding atomic orbital (s)
C) the energy of the electron
D) the minimum wavelength of the light needed to remove the electron from the atom
E) all the above are determined by n

the correct answer is(b)

88) which one of the following sets of quantum numbers is not acceptable?

A) $n=4, L=3, m_l = -2, m_s=+\frac{1}{2}$

B) $n=4, L=1, m_l = 1, m_s=-\frac{1}{2}$

C) $n=3, L=2, m_l = -3, m_s=-\frac{1}{2}$

D) $n=3, L=0, m_l = 0, m_s=+\frac{1}{2}$

E) $n=2, L=0, m_l = 0, m_s=+\frac{1}{2}$

the correct answer is(c)

89) which of the the following is a valid set of four quantum numbers (n, L, m_l, m_s) ?

A) 3,2,3,+ $\frac{1}{2}$

B) 3,2,,1,0

C) 3,0,0,-1/2

D) 3,3,0, +1/2

E)0,-1,0,- $\frac{1}{2}$

the correct answer is(c)

90) which of the following combination of quantum numbers is not allowed?

	n	L	m_l	m_s
a	1	1	0	+1/2
b	3	0	0	-1/2
c	2	1	-1	+1/2
d	4	3	-2	-1/2
e	4	2	0	+1/2

the correct answer is(a)

91) for a 3s electron the correct set of four quantum numbers is:

A) $n=3, L=1, m_l = 0, m_s = \frac{1}{2}$

B) $n=3, L=3, m_l = 2, m_s = \frac{1}{2}$

C) $n=3, L=2, m_l = 3, m_s = \frac{1}{2}$

D) $n=3, L=0, m_l = 0, m_s = \frac{1}{2}$

E) $n=3, L=2, m_l = 2, m_s = -\frac{1}{2}$

the correct answer is(d)

92) the possible values of the magnetic quantum number of a 4p electron are:

A) 1,2,3 b) $+\frac{1}{2}, -\frac{1}{2}$ c) -1, 0, 1 d) 0,1,2 e) none of these

For p $\rightarrow L=1 \rightarrow m_l = -1,0,1$

the correct answer is(c)

93) which of the following sets of quantum numbers is possible for a 3d electron?

A) $n=3, L=1, m_l = 0, m_s = +\frac{1}{2}$

B) $n=2, L=1, m_l = -1, m_s = +1$

C) $n=3, L=2, m_l = +2, m_s = -\frac{1}{2}$

D) $n=2, L=1, m_l = +1, m_s = -\frac{1}{2}$

E) $n=2, L=0, m_l = 0, m_s = +\frac{1}{2}$

the correct answer is(c)

94) what is the frequency (in HZ) of infrared radiation that has a wavelength of 1.00×10^3 nm?

A) 6×10^{14} b) 4×10^{13} c) 3×10^{14} d) 5×10^{13} e) 7×10^{14}

the correct answer is(c)

95)The frequency (in HZ) of a photon of Hight with a wavelength of 550 nm is:

A) 7.54×10^{14} b) 8.57×10^{14} c) 6.67×10^{14} d) 4.62×10^{14} e) 5.45×10^{14}

96)Calculate the energy (j) of one mole of photons which have a wavelength of 425.1 nm

A) 3.68×10^5 b) 4.68×10^{-19} c) 2.82×10^5 d) 2.15×10^5

97) the wavelength in nanometers corresponding to the electronic transition from $n=6$ to $n=2$ in the hydrogen atom is:

- A)397 b) 411 c)450 d) 389 e)380

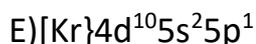
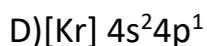
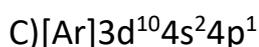
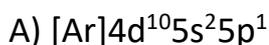
the correct answer is(b)

98) the longest wavelength of the electromagnetic radiation emitted by hydrogen atom in undergoing a transition from the $n=5$ level occurs when the final level has n equal to:

- A)3 b)4 c)5 d)6 e)1

the correct answer is (b)

99) the correct electronic configuration of an element that has atomic number=31 is:



100) what the hybridization of the central atom in OF_2 ?

- A) sp^2 b) sp^3d^2 c) sp d) sp^3d e) sp^3

101) which of the following ions has the smallest radius:

- A) O^{2-} B) Ca^{+2} c) S^{2-} D) F^- E) Li^+

102) two elements that have the same ground-state valence shell configuration of ns^2np^3 are:

- A) Ge and Pb B) N and Sb C) O and Se D) Sr and Mg e) Al and Ga

103) the bond angles in I_3^- are expected to be:

- A) 90° and 180° B) 120° c) 109.5° d) 90° and 120° e) 180°

104) the element that having the highest ionization energy is:

- A) Al B) Mg c) Ca b) Na e) K

105) what is the standard enthalpy of formation of liquid n-butanol, $CH_3CH_2CH_2CH_2OH$?



substance	ΔH_f (kJ/mol)
$H_2O(l)$	-285.8
$CO_2(g)$	-393.5

- A) **-528KJ** b) **-428KJ** c) **-328KJ** d) **-753KJ** e) **-603KJ**

106) how can Cl acquire a noble gas electron configuration?

- A) by losing three electrons
B) by gaining one electron
C) by losing one electron
D) by gaining two electrons
E) by losing two electrons

107) which of the following O-Bonds is most polar?

- A) O-B B) O-C C) O-N D) O-F E) O-O

108) how many electrons are there in the valence shell of Cl in ClO_4^- ?

- A) 10 B) 8 C) 14 D) 12 E) 7

109) An atom of which of the following elements is **not** paramagnetic in the ground state ?

- A) Te b) Si c) Pt D) Zn e) Cr

110) which of the following statements is correct for multi-electron atoms?

- A) the spin quantum number (m_s) describes the energy of an orbital
B) the angular momentum quantum number (l) describes the orientation of an orbital
C) the spin quantum number (m_s) describes the shape of an orbital
D) the magnetic quantum number (m_l) describes the shape of an orbital
E) the principal quantum number (n) describes the size of an orbital

111) in which of the following bonds would Se have a partial negative charge?

- A) Se-Ae b) Se-Cl c) Se-Br d) Se-O e) Se-O

112) the molecular geometry of NF_3 is:

- A) trigonal pyramidal
B) seesaw (distorted tetrahedral)
C) square pyramidal
D) T-shape
E) trigonal bipyramidal

113) which element has the following ground –state electron configuration ?
{kr}5s² 4d¹⁰5p³?

A)Sn B)Sb C)Pb D)Bi e)Te

The correct answer is (b)

114) the molecular geometry of the SO₃ molecule is

A) pyramidal

B) tetrahedral

C)trigonal planar

D) distorted tetrahedron (seesaw)

E) Square planar

The correct answer is (c)

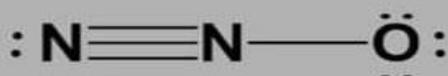
115) which of the following substances does not follow the octet rule?

A)CO₂ B)CL₂ C) ICL D)BeCL₂ E)SO₂

The correct answer is (D)

116)

What formal charges are there in the following Lewis structure of N_2O ?



Select one:

- a. Central N has +1, terminal N has 0, O has -1
- b. Each N has 0, O has -1
- c. Terminal N has -2, central N has +1, O has -1
- d. Terminal N has +1, central N has 0, O has -1
- e. Each N has +1, O has 0

كلما تأخر عليك شيء , و طال انتظاره استبشر خيرا

سيأتيك أجمل مما تتخيل , لأن ربك لا ينساك أبدا